

**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

Actuarial Valuation as of June 30, 2010

Prepared October 2010

**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

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City of Springfield
Police Officers and Fire Fighters' Retirement Fund

June 30, 2010 Actuarial Valuation

Introduction and Purpose

In this report, we present the results of the June 30, 2010 actuarial valuation for the City of Springfield Police Officers and Fire Fighters' Retirement Fund. The report has been prepared at the request of the Fund's Board for the sole use of the Board and the City of Springfield as the contributing plan sponsor.

PURPOSES OF THE VALUATION

The actuarial valuation of the Plan is intended to accomplish several purposes:

- The determination of the recommended level of employer contributions for the City's July 1, 2011 – June 30, 2012 fiscal year;
- provide information required under applicable governmental accounting standards;
- assessment of the relative funded position of the plan on an ongoing basis, i.e., through a comparison of plan assets and projected plan liabilities.

**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Actuarial Certification

As requested, we performed an actuarial valuation of the City of Springfield Police Officers and Fire Fighters' Retirement Fund as of June 30, 2010 for the fiscal year ending June 30, 2012. Our findings are set forth in this actuary's report. This report reflects the benefit provisions and contribution rates in effect as of June 30, 2010.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the Fund have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the Fund and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the Fund.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in this report.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Fund. Actuarial computations presented in this report under GASB Statements No. 25 and 27 are for purposes of fulfilling financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Fund's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in this report, and of GASB Statements No. 25 and 27. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the City of Springfield. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

- (a) The City may provide a copy of Milliman's work, in its entirety, to the Fund's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Fund.
- (b) The City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We respectfully submit the following report, and we look forward to discussing it with you.

Sincerely,



Michael J. Zwiener, FSA
Consulting Actuary



Michael A. Sudduth, FSA
Actuary

MJZ/MAS/als

**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Discussion of Valuation Results

1. Contribution Recommendation and Plan Experience

The results of this valuation are used to determine recommended contribution rates to the Fund for the July 1, 2011-June 30, 2012 fiscal year. A comparison of recommended contribution rates (presented as a percentage of pay) for the current and immediately preceding valuations is shown below:

	<u>Actuarial Valuation as of</u>	
	<u>June 30, 2009</u>	<u>June 30, 2010</u>
Applies to Fiscal Year	07/01/10-06/30/11	07/01/11-06/30/12
Member Contribution Rate	15.34%	13.35%
City Contribution Rate	57.77%	93.02%
Total	73.11%	106.37%

The contribution rate for Tier 1 Members is the sum of a flat 8.5% rate plus the Additional Funding Contribution (AFC). The AFC is to be set to cover the cost of the additional 0.3% multiplier. Statute requires that the AFC be adjusted each 3 years. The AFC was last recalculated to be 7.52%. However, in accordance with agreements made between the City and the Members, the City made a one-time contribution of \$4.75 million to pay for a portion of the increase in the AFC. As a result, the AFC being paid by the Members is 4.85%.

There was an increase in the recommended contribution rate as compared to the preceding year. The primary reasons for the increase are: 1) actuarial losses due to the continued recognition of poor investment return that occurred in the years ending June 30, 2009 and 2008; 2) the implementation of the new amortization method; and 3) the transfer of the Tier 2 Members to LAGERS. A reconciliation of the recommended contribution rate from last year to this year is shown on the next page.

June 30, 2009 valuation 73.11%

Experience (Gain)/Loss

Investments	4.26%
Prior Year Contribution Shortfall	(4.58%)
Salary Scale/Active Data	-0.65%
Average Salary at Retirement	0.22%
Retirement	-0.22%
Withdrawal	0.32%
Disability	-0.26%
Death	-0.02%
New Hires	0.02%
Terminated Vested Retirement	0.02%
Inactive Mortality	0.22%
Other	2.11%

Transfer of Tier 2 Members to LAGERS 7.13%

Change of Amortization Method 24.69%

June 30, 2010 valuation 106.37%

Pension Plan Section 2-457 provides that the source of City contributions is a tax levy not to exceed 1.5 mill on all taxable property in the City. The statute further provides that the City may alternatively fund on an actuarial basis subject to the discretion of the City Council.

2. Plan Assets

The market value of plan assets increased from \$112,370,187 at June 30, 2009 to \$139,554,639 at June 30, 2010. A balance sheet and statement of income and disbursements are presented on pages 10 and 11, respectively. The net market rate of return was 8.7% for the period.

City contributions to the Fund for the year were \$26,322,117, employee contributions totaled \$2,772,203 and the sales tax revenue (including receivables) was \$5,594,735. Benefit Payments total \$16,170,257 plus \$1,237,357 in refunded employee contributions.

The actuarial value of assets increased from \$147,197,520 at June 30, 2009 to \$160,365,244 at June 30, 2010. The net actuarial rate of return for the period was -2.3% vs. the assumed rate of 7.5%.

3. Actuarial Assumptions, Methods and Plan Provisions

This valuation incorporates several significant changes to the methods and plan provisions, as follows:

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- a. The removal of all Tier 2 Members from the Plan (the refund of their contributions was also reflected).
- b. The AFC was changed to 4.85%, for a total Member contribution of 13.35% of pay.
- c. The amortization method was changed to a 20 year closed level dollar amortization (from a 30 year closed level percent of pay amortization).

All other actuarial assumptions, methods and plan provisions remained the same as the prior year. Descriptions of these can be found on pages 19-25.

4. Plan Population

The number of active participants decreased from 481 in the previous valuation to 406 in the current valuation. The primary reason for the decrease is the removal of Tier 2 Members. The number of retirees and beneficiaries increased from 477 to 485. The number of deferred vested participants decreased from 9 to 8.

5. Funded Status

Methods of measuring a Plan's funded status are prescribed in paragraph 37 of Statement 25 of the Governmental Accounting Standards Board.

The GASB rules provide a couple of bases for assessing the funded status of the plan on an ongoing basis (see page 17 for detailed calculations). One basis is to divide the Actuarial Value of Assets by the Accrued Liability. Page 17 shows this ratio to be 48.9% for the current year. An upward trend in this ratio is considered a favorable indicator of the plan's funding progress while a downward trend is unfavorable.

Another measure displayed on page 17 is the Unfunded Accrued Liability as a percentage of Covered Payroll. A downward trend in this ratio over time is considered favorable while an upward trend is unfavorable.

As of June 30, 2010, the Fund has a Net Pension Asset under GASB 25/27 of \$19,044,493.

6. Missouri Pension Reform Legislation

In 2007 the Missouri legislature passed legislation aimed at the state's public sector pension plans. The legislation was based on private pension reform instituted at the federal level. Many of the provisions are applicable to the Springfield Police Officers and Fire Fighters' Retirement Fund, including:

- Plans less than 60% funded are required to have an accelerated contribution schedule prepared by their actuary. We have prepared this schedule, and it is presented on page 16.

- Plans less than 60% funded that have contributed less than 100% of the required contribution for 5 consecutive years and have a declining funded ratio shall have state funds withheld.
- Plans less than 80% are prohibited from providing benefit enhancements, and plans over 80% funded may only provide benefit increases that allow the funded ratio to remain over 75%.
- Benefit increases must be amortized over 20 years.
- Increased fiduciary responsibility and education requirements.

7. Additional Comments

Although there has been some rebound, stock market performance has not been this poor since the 1930's. Most public retirement systems are feeling the pain of significant asset losses. The investment returns on the market value of assets for the years ending June 30, 2008, June 30, 2009 and June 30, 2010 were -4.7%, -19.1% and 8.7%, respectively, compared to the assumed return of +7.5% each year. Expressed in dollars, the market value of assets on June 30, 2010 is about \$50,000,000 lower than what would have existed if market returns had matched the assumption over the last three years.

Retirement plans use several mechanisms to attempt to provide more stability in contribution levels, one of which is an asset smoothing method. This Fund utilizes a method that compares the expected return on assets with the return actually experienced. One quarter of the difference between expected and actual return (positive or negative) is recognized in the current year and each of the next three years. Due to the smoothing method, the rate of return on the actuarial value of assets for the year ending June 30, 2010 was -2.3% as compared to 8.8% on a pure market value basis.

Since the investment losses that occurred in the years ending June 30, 2008 and 2009 will not be fully recognized until the June 1, 2013 actuarial valuation, the Board should be aware that recommended contribution rates (both in dollars and as a percentage of payroll) are expected to continue to increase during that period.

Use of an asset smoothing method is a common practice for public sector retirement plans. However, it is important to identify the potential impact of the deferred investment experience. Key June 30, 2010 actuarial valuation results are shown using both the actuarial value of assets and pure market value:

	June 30, 2010 Results	
	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Liability	\$328,042,790	\$328,042,790
Asset Value	160,365,244	139,554,639
Unfunded Actuarial Liability	\$167,677,546	\$188,488,151
Funded Ratio	48.9%	42.5%
Total Contribution Rate	106.37%	115.77%
Member Contribution Rate	13.35%	13.35%
City Contribution Rate	93.02%	102.42%

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Summary of Valuation Results

	Valuation Date <u>June 30, 2007</u>	Valuation Date <u>June 30, 2008</u>	Valuation Date <u>June 30, 2009</u>	Valuation Date <u>June 30, 2010</u>
Participant Counts				
Police				
Actives	310	299	291	238
Receiving Payments	201	215	217	224
Terminated Vesteds	<u>5</u>	<u>6</u>	<u>8</u>	<u>8</u>
Total	516	520	516	470
Fire				
Actives	204	206	190	168
Receiving Payments	248	247	260	261
Terminated Vesteds	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Total	453	454	451	429
Market Value of Assets	138,890,814	128,297,956	112,370,187	139,554,639
Actuarial Value of Assets	138,890,814	140,780,239	147,197,520	160,365,244
Present Value of Future Benefits	338,482,187	355,905,093	373,118,148	377,219,584
Entry Age Normal Accrued Liability	277,861,524	295,579,925	316,680,863	328,042,790
Unfunded Entry Age Normal Accrued Liability	138,970,710	154,799,686	169,483,343	167,677,546
Recommended Contribution (Employer and Employee)	14,670,072	15,685,749	17,418,704	22,306,824
Covered Payroll	23,863,923	24,695,779	23,825,564	20,970,392
Recommended Contribution as a Percentage of Covered Payroll				
Member Portion	11.26%	11.16%	15.34%	13.35%
City Portion	<u>50.21%</u>	<u>52.36%</u>	<u>57.77%</u>	<u>93.02%</u>
Total	61.47%	63.52%	73.11%	106.37%
Present Value of Accrued Benefits	264,697,122	279,478,115	299,261,444	309,911,273

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Statement of Assets as of June 30, 2010

<u>Assets</u>	<u>Market Value</u>
1. Cash and Short Term Investments	\$3,672,592
2. Investments at Fair Market Value	132,387,989
3. Accrued Interest Receivable	50,464
4. Accrued Sales Tax Receivable	4,038,384
Total Assets	140,149,429
 <u>Liabilities</u>	
1. Accounts Payable	10,876
2. Employee Contribution Payable for Tier 2 Members Who Transferred to LAGERS (Estimated)	583,914
Total Liabilities	594,790
 Net Assets	 <u>139,554,639</u>

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

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Statement of Income and Disbursements

1. Market Value of Assets as of July 1, 2009	\$112,370,187
2. Income:	
a. Employer Contributions	26,322,117
b. Employee Contributions	2,772,203
c. Public Safety Sales Tax (\$4,038,384 Receivable)	5,594,735
d. Donations	6,804
e. Other Revenue	62,665
f. Interest and Dividends	283,777
g. Net Appreciation/(Depreciation) in Fair Value	<u>10,552,102</u>
h. Total Income	45,594,403
3. Expenses:	
a. Employee Benefit Distributions	16,170,257
b. Refund of Employee Contributions	1,237,357
c. Administrative Expenses	201,959
d. Investment Expenses	<u>216,464</u>
e. Total Expenses	17,826,037
4. Net Increase (Decrease) = (2h) - (3e)	27,768,366
5. Employee Contribution Payable for Tier 2 Members Who Transferred to LAGERS (Estimated)	(583,914)
6. Market Value of Assets as of June 30, 2010 = (1) + (4) + (5)	\$139,554,639
7. Net Rate of Return	8.7%

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Development of Actuarial Value of Assets

	Valuation Date <u>June 30, 2010</u>
1. Actuarial Value Beginning of Year	\$147,197,520
2. Market Value End of Year	139,554,639
3. Market Value Beginning of Year	112,370,187
4. Non-Investment Cash Flows ⁽¹⁾	16,766,996
5. Investment Income	
a. Market Total: (2) - (3) - (4)	10,417,456
b. Assumed Rate of Return	7.50%
c. Amount for Immediate Recognition ⁽²⁾	9,056,526
d. Amount for Phased-In Recognition: (5a) - (5c)	1,360,930
6. Phased-In Recognition of Investment Income	
a. Current Year: .25 x (5d)	340,233
b. First Prior Year	(8,835,270)
c. Second Prior Year	(4,160,761)
d. Third Prior Year	<u>N/A</u>
e. Phased-In Investment Gain Recognized	(12,655,798)
7. Actuarial Value End of Year: (1) + (4) + (5c) + (6e)	160,365,244
8. Excess of Market Value over Actuarial Value: (2) - (7)	(20,810,605)
9. Approximate Rate of Return on Actuarial Value	-2.3%

⁽¹⁾ Contributions minus benefit payments

⁽²⁾ Assumed Rate times (3) + Assumed Rate/2 times (4)

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Development of Asset Values for 0.3% Multiplier

A. Development of Market Value of Assets

1. Market Value of Assets as of July 1, 2009	\$2,986,379
2. a. Employer Contributions	4,750,000
b. Employee Contributions	639,556
c. Net Investment Income	<u>491,659</u>
d. Total Income	5,881,215
3. a. Benefit Distributions and Refunds of Employee Contributions	<u>580,329</u>
b. Total Expenses	580,329
4. Net Increase (Decrease): (2d) - (3b)	5,300,886
5. Market Value of Assets as of June 30, 2010: (1) + (4)	\$8,287,265

B. Development of Actuarial Value of Assets

1. Actuarial Value Beginning of Year	\$3,913,630
2. Market Value End of Year	8,287,265
3. Market Value Beginning of Year	2,986,379
4. Non-Investment Cash Flows (Contributions minus Benefit Payments)	4,809,227
5. Investment Income	
a. Market Total: (2) - (3) - (4)	491,659
b. Assumed Rate of Return	7.50%
c. Amount for Immediate Recognition: (3) x (5b) + (4) x (5b) / 2	404,324
d. Amount for Phased-In Recognition: (5a) - (5c)	87,335
6. Phased-In Recognition of Investment Income	
a. Current Year: .25 x (5d)	21,834
b. First Prior Year	(239,245)
c. Second Prior Year	(104,758)
d. Third Prior Year	<u>N/A</u>
e. Phased-In Investment Gain Recognized	(322,169)
7. Actuarial Value End of Year: (1) + (4) + (5c) + (6e)	8,805,012
8. Excess of Market Value over Actuarial Value: (2) - (7)	(517,747)

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Actuarial Balance Sheet

The key elements of the actuarial funding process are illustrated in the Actuarial Balance Sheet. The format of the balance sheet captures the essential purpose of an actuarial cost method - the determination of assets sufficient to provide for pension benefits.

The Actuarial Present Value of Current and Prospective Plan Benefits is the liability that must be balanced by Current and Prospective assets. The Present Value of Future Normal Cost Contributions represents the prospective assets from contributions that will be made for costs allocated to the future.

June 30, 2010

Liabilities

1. Actuarial Present Value of Future Benefits

a. Active Participants	\$156,197,889
b. Terminated Vested Participants	399,757
c. Retired Participants	<u>220,621,938</u>
d. Total	377,219,584

Assets

1. Current Valuation Assets

a. Actuarial Value of Assets	160,365,244
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2. Prospective Valuation Assets

a. Unfunded Actuarial Liability	167,677,546
b. Present Value of Future Normal Cost Contributions	<u>49,176,794</u>

3. Total	377,219,584
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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Development of Recommended Contribution

1. Present Value of Future Benefits	
a. Active Participants	\$156,197,889
b. Terminated Vested Participants	399,757
c. Retired Participants	<u>220,621,938</u>
d. Total	377,219,584
2. Present Value of Future Normal Costs	49,176,794
3. Actuarial Value of Assets	160,365,244
4. Entry Age Unfunded Accrued Liability: (1d) - (2) - (3)	167,677,546
5. Entry Age Normal Cost	6,432,729
6. Present Value of Future Earnings	168,784,368
7. Payroll	20,970,392
8. Amortization Payment (Level Dollar 20 Year Closed Period from July 1, 2010)	15,874,095
9. Recommended Contribution: (5) + (8)	22,306,824
10. Recommended Contribution as a Percentage of Payroll	
Normal Cost	30.68%
Amortization Payment	<u>75.69%</u>
Total	106.37%
11. Member Portion	13.35%
12. City Portion	93.02%

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Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Accelerated Contribution Schedule Required by Missouri Revised Statute 105.684

Valuation Date	Fiscal Year End	Entry Age Normal Cost	<u>Current Methodology Schedule *</u>		
			Expected Unfunded Accrued Liability	Amortization Payment	Recommended Contribution
6/30/2010	6/30/2012	6,432,729	167,677,546	15,874,095	22,306,824
6/30/2011	6/30/2013	6,361,308	169,108,449	16,387,994	22,749,302
6/30/2012	6/30/2014	6,217,534	165,501,781	16,456,657	22,674,191
6/30/2013	6/30/2015	6,022,168	161,011,285	16,471,833	22,494,001
6/30/2014	6/30/2016	5,786,934	156,051,860	16,475,204	22,262,138
6/30/2015	6/30/2017	5,513,666	150,654,427	16,471,855	21,985,521
6/30/2016	6/30/2018	5,220,013	144,798,824	16,461,912	21,681,925
6/30/2017	6/30/2019	4,897,343	138,475,176	16,446,871	21,344,214
6/30/2018	6/30/2020	4,621,152	131,645,160	16,425,122	21,046,274
6/30/2019	6/30/2021	4,306,134	124,356,133	16,406,175	20,712,309
6/30/2020	6/30/2022	3,944,952	116,490,696	16,379,042	20,323,994
6/30/2021	6/30/2023	3,575,612	107,993,343	16,339,235	19,914,847
6/30/2022	6/30/2024	3,181,984	98,864,261	16,290,006	19,471,990
6/30/2023	6/30/2025	2,793,189	89,051,561	16,226,464	19,019,653
6/30/2024	6/30/2026	2,368,719	78,544,117	16,149,699	18,518,418

* Because the Fund is now using a decreasing amortization schedule as required by Missouri Revised Statute 105.684, there is no alternative accelerated schedule.

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GASB 25 and 27 Disclosure Information

Schedule of Funding Progress

<u>Date of Valuation</u>	<u>Actuarial Asset Value</u>	<u>Entry Age Normal Accrued Liability</u>	<u>Unfunded Accrued Liability (UAL)</u>	<u>Funded Ratio</u>	<u>Covered Payroll</u>	<u>UAL as a Percentage of Covered Payroll</u>
June 30, 1994	81,735,481	96,269,283	14,533,802	84.9%	13,017,803	111.6%
June 30, 1995	87,113,039	111,261,338	24,148,299	78.3%	14,816,363	163.0%
June 30, 1996	92,005,064	120,470,362	28,465,298	76.4%	15,205,892	187.2%
June 30, 1997	98,471,537	129,131,343	30,659,806	76.3%	16,616,974	184.5%
June 30, 1998	107,955,272	136,533,065	28,577,793	79.1%	17,893,509	159.7%
June 30, 1999	116,424,865	150,252,731	33,827,866	77.5%	18,448,343	183.4%
June 30, 2000	124,461,663	155,782,143	31,320,480	79.9%	19,046,000	164.4%
June 30, 2001	129,479,927	168,344,798	38,864,871	76.9%	20,222,061	192.2%
June 30, 2002	129,854,216	179,125,555	49,271,339	72.5%	22,142,466	222.5%
June 30, 2003	129,848,871	195,974,774	66,125,903	66.3%	22,816,675	289.8%
June 30, 2004	130,419,433	238,755,058	108,335,625	54.6%	24,104,871	449.4%
June 30, 2005	130,496,305	250,849,523	120,353,218	52.0%	23,866,496	504.3%
June 30, 2006	133,494,217	263,813,767	130,319,550	50.6%	23,746,840	548.8%
June 30, 2007	138,890,814	277,861,524	138,970,710	50.0%	23,863,923	582.3%
June 30, 2008	140,780,239	295,579,925	154,799,686	47.6%	24,695,779	626.8%
June 30, 2009	147,197,520	316,680,863	169,483,343	46.5%	23,825,564	711.4%
June 30, 2010	160,365,244	328,042,790	167,677,546	48.9%	20,970,392	799.6%

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

GASB 25 and 27 Disclosure Information

Schedule of Employer Contributions and Development of Net Pension Obligation

Fiscal Year Ending	Annual Required Contribution (ARC)	Interest on NPO	ARC Adjustment	Amort. Factor	Annual Pension Cost	Actual Employer Contributions	Change in NPO	NPO Balance
(1)	(2)	(3)	(4)	(5)	(6)=(2)+(3)-(4)			
June 30, 1994	2,098,927	---	---	---	2,098,927	2,098,927	0	0
June 30, 1995	1,998,834	---	---	---	1,998,834	1,998,834	0	0
June 30, 1996	2,578,429	---	---	---	2,578,429	2,578,429	0	0
June 30, 1997	3,111,237	---	---	---	3,111,237	3,111,237	0	0
June 30, 1998	3,686,008	---	---	---	3,686,008	3,686,008	0	0
June 30, 1999	3,945,188	---	---	---	3,945,188	3,945,188	0	0
June 30, 2000	4,049,600	---	---	---	4,049,600	4,049,600	0	0
June 30, 2001	4,497,049	---	---	---	4,497,049	4,497,049	0	0
June 30, 2002	4,493,908	---	---	---	4,493,908	4,493,908	0	0
June 30, 2003	5,196,810	---	---	---	5,196,810	5,196,810	0	0
June 30, 2004	5,891,663	---	---	---	5,891,663	5,891,663	0	0
June 30, 2005	7,318,828	---	---	---	7,318,828	6,795,690	523,138	523,138
June 30, 2006	9,834,917	39,235	23,334	22.420	9,850,818	6,831,086	3,019,732	3,542,870
June 30, 2007	10,237,825	265,715	158,023	22.420	10,345,517	7,388,016	2,957,501	6,500,371
June 30, 2008	12,347,207	487,528	315,782	20.585	12,518,953	8,794,259	3,724,694	10,225,065
June 30, 2009	13,273,246	766,880	546,620	18.706	13,493,506	23,979,519	(10,486,013)	(260,948)
June 30, 2010	13,137,104	(19,571)	(15,774)	16.543	13,133,307	31,916,852	(18,783,545)	(19,044,493)

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Actuarial Methods

Following are brief descriptions of the actuarial cost and asset valuation methods used in the valuation.

Actuarial Cost Method

The Entry Age Normal Cost Method on an individual basis is used. Normal costs are computed as a level percentage of pay. The Unfunded Entry Age Accrued Liability is amortized as a level dollar amount over a 20 year closed period measured from June 30, 2010. In the previous valuation, the Unfunded Entry Age Accrued Liability was amortized over 30 years as a level percent of covered payroll. For this purpose, covered payroll was assumed to increase 3% per year.

The Unfunded Entry Age Accrued Liability is amortized over a 20 year closed period measured from June 30, 2010. Each year, the amortization period will decrease by 1 until it reaches 0 years as of June 30, 2030. In the previous valuation, the Unfunded Entry Age Accrued Liability was amortized over a 30 year closed period measured from June 30, 2009 to June 30, 2014 and a 25 year open period thereafter.

Asset Valuation Method

An asset valuation method is used to help smooth short term fluctuations in market value.

The actuarial value of assets is equal to the prior years actuarial value of assets adjusted as follows:

1. increased with actual contributions for the year;
2. reduced by actual benefit payments and expenses for the year;
3. increased by investment income equal to the assumed rate of return multiplied by the beginning market value;
4. increased by phased in investment gains /(losses)

Each year, the amount of investment income to be phased in is equal to the excess of the plan's actual investment performance in excess of the amount credited under item 3) above. 25% of this amount plus 25% of the similar amounts calculated in each of the three preceding years are summed and recognized as the amount of phased-in gains recognized in the current year. There is no specific corridor around market value in which the resulting value must fall.

The actuarial value of assets was reset to the market value of assets for the June 30, 2007 valuation.

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Actuarial Assumptions

Following are the primary actuarial assumptions used in performing the valuation.

Interest Rate 7.50% per annum, net of investment expenses.

Annual Pay Increases

<u>Years of Service</u>	<u>Fire</u>	<u>Police</u>
1	7.5%	7.5%
2	7.5%	7.5%
3	7.5%	7.5%
4	7.5%	7.5%
5	7.5%	7.5%
6	7.5%	7.5%
7	4.5%	7.5%
8	4.5%	7.5%
9	4.5%	4.5%
10	4.5%	4.5%
11	3.0%	4.5%
12	3.0%	4.5%
13 and later	3.0%	3.0%

Final Average Salary Adjustment For Fire Members, the Average Salary at retirement is increased by a factor of 1.09 for Members 40 and older and a factor of 1.03 for Members younger than 40.

For Police Members, the Average Salary at retirement is increased to reflect the assumption that each participant will have the maximum accrual paid out from their continuous operating holiday balance. For Members 40 and older, the maximum accrual amount is tripled.

Mortality RP-2000 Employees, Healthy Annuitant and Disabled Mortality Tables, male and female rates.

Turnover

Separation from service for reasons other than disability, death, or age/service retirement. Rates at selected ages:

<u>Age</u>	<u>Percentage Terminating in the next Year</u>	
	<u>Police</u>	<u>Fire</u>
25	5.27%	1.75%
30	4.83%	1.61%
35	4.47%	1.49%
40	3.84%	1.28%
45	3.21%	1.07%
50	1.52%	0.51%
55	0.33%	0.11%

Forfeiture of City Provided Benefit

A vested member who terminates employment may elect to receive a return of his/her own contributions and forfeit any City-provided benefit. The portion of members making such election at selected ages:

<u>Age</u>	<u>Percentage Electing ROC</u>
35 and under	100%
36 - 54	grading from 95% to 5%
55 and over	0%

Rate of Disability

Probability of becoming disabled during the next year. Rates at selected ages:

<u>Age</u>	<u>Percentage Becoming Disabled in the Next Year</u>
20	0.25%
25	0.29%
30	0.34%
35	0.43%
40	0.58%
45	0.89%
50	1.86%
55	3.80%

100% of all disabilities are assumed to be duty related.

Workers Compensation offset to the plan disability benefit is assumed to be zero.

Rates of Retirement

Probability of an eligible member retiring under the age/service provisions during the next year. Rates are as follows:

<u>Age</u>	<u>Percentage Retiring In the Next Year</u>
45	20%
46	20%
47	25%
48	25%
49	25%
50	30%
51	25%
52	25%
53	25%
54	35%
55	60%
56	60%
57	60%
58	60%
59	60%
60	100%

Dependent Information

For retired members, actual marital status and spouse birth date are used. For active members, 90% are assumed to be married, with males assumed three years older than their spouses. Members are assumed to have no dependent children.

Cost-of-Living Adjustment (COLA):

Automatic 3% COLA reflected

**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Summary of Plan Provisions

A summary of the current primary provisions of the Fund are described below. A complete description of the provisions can be found in Sections 2-441 through 2-482 of the Springfield City Code as amended through General Ordinance 5863 adopted March 8, 2010.

Average Salary

Average of the highest three years salary within the last 10 Years of Service. Salary for this calculation is equal to actual salary before deductions, plus payments for unused floating holidays, unused compensatory time, scheduled holidays, Kelly days, pin days and accrued vacation time.

Normal Retirement Age

Eligibility for unreduced benefits upon meeting any of the following:

- Age 50 and 20 Years of Service,
- 25 Years of Service, or
- Age 60.

Age/Service Benefit

A monthly benefit equal to $1/12$ of Average Salary times 2.8% times Years of Service. The maximum benefit is 70% of Average Salary.

Normal Form of Payment

The benefit is payable for the member's lifetime. If the member should predecease his/her spouse, the spouse is entitled to a lifetime survivors benefit. The amount of the benefit is a percentage of the Average Salary. The percentage is equal to 25% plus $1-1/8\%$ for each Year of Service over five years, not to exceed 50% in total.

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Cost of Living Adjustment (COLA)

Every July 1st, the monthly pension is increased by 3% for the following groups of retirees provided pension payment has been paid at least 12 months prior to July 1:

- Age/service retirees age 56 or greater
- Disability retirees of any age

Early Retirement Age

Eligibility for early retirement is satisfied upon attainment of age 55 and completion of five Years of Service.

Early Retirement Benefit

Determined using regular formula and reducing the result 1/200 for each month by which the benefit start date precedes age 60.

Member Contributions

13.35% of pay (11.35% in the prior year)

Duty Disability

All members are eligible. The monthly benefit is equal to 2/3 of the salary in effect at the time of retirement.

Non-Duty Disability

Employees hired on or before January 1, 2005: A monthly benefit equal to 2.45% of Average Salary times Years of Service. A member must have three Years of Service to be eligible.

Employees hired after January 1, 2005 and before June 1, 2006: A monthly benefit equal to 2.45% of Average Salary times Years of Service. A member must have five Years of Service to be eligible.

In all cases, the minimum/maximum benefits are 25%/50% of Average Salary.

Duty Death in Service

All members are eligible. A monthly benefit to the spouse equal to 50% of salary in effect at time of death. Additional benefits to unmarried children under age 18, but total cannot exceed 75% of pre-death salary.

Non-Duty Death in Service

A member is eligible after completing five Years of Service. The benefit is 25% of Average Salary plus 1 1/8% of Average Salary for each Year of Service in excess of five, not to exceed 50%. Additional benefits to unmarried children under 18 but total benefit cannot exceed 60% of Average Salary.

Return of Contributions

Member contributions are returned to age/service retirees and disability retirees upon commencement of monthly benefits, without interest.

Vested members who terminate before eligible for retirement may elect to receive a return of their own contributions without interest. Election of this benefit results in a forfeiture of any City provided benefit.

Eligibility

The Plan is now closed to new employees. Members hired on or after June 1, 2006 have been removed from the Plan and are currently participants in the LAGERS Pension System. Their contributions in this Plan have been refunded and they are no longer due any benefits.

Members hired before June 1, 2006 will continue to earn benefits under the Plan as described above.

**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Summary of Participant Data

	<u>Police</u> <u>June 30, 2010</u>	<u>Fire</u> <u>June 30, 2010</u>
1. Active Participants		
a. Count	238	168
b. Plan Compensation	12,419,591	8,550,801
c. Average Compensation	52,183	50,898
d. Average Age	39.3	41.2
e. Average Service	12.8	12.9
2. Retired Participants (including Beneficiaries)		
a. Count	224	261
b. Total Monthly Benefits	\$643,125	\$744,486
c. Average Monthly Benefits	\$2,871	\$2,852
d. Average Age at Onset of Disability Retirements	40.9	45.3
3. Terminated Vested Participants		
a. Count	8	0
b. Total Monthly Benefits	\$7,824	\$0
c. Average Monthly Benefits	\$978	\$0

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Retiree and Beneficiary Distributions

**Fire
Distribution of Service Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	0	\$0	\$0
45 – 49	0	0	0
50 – 54	15	53,628	3,575
55 – 59	22	81,086	3,686
60 – 64	28	95,473	3,410
65 – 69	33	109,002	3,303
70 – 74	25	73,203	2,928
75 – 79	11	31,381	2,853
80 +	<u>18</u>	<u>43,421</u>	<u>2,412</u>
Totals	152	\$487,194	\$3,205

**Police
Distribution of Service Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	0	\$0	\$0
45 – 49	6	28,099	4,683
50 – 54	18	71,553	3,975
55 – 59	23	84,147	3,659
60 – 64	34	111,193	3,270
65 – 69	19	57,426	3,022
70 – 74	20	50,361	2,518
75 – 79	10	27,730	2,773
80 +	<u>1</u>	<u>1,315</u>	<u>1,315</u>
Totals	131	\$431,824	\$3,296

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Retiree and Beneficiary Distributions

**Fire
Distribution of Disability Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	2	\$2,765	\$1,383
45 – 49	3	9,873	3,291
50 – 54	10	29,979	2,998
55 – 59	12	35,797	2,983
60 – 64	11	31,330	2,848
65 – 69	14	39,700	2,836
70 – 74	4	11,837	2,959
75 – 79	3	6,891	2,297
80 +	<u>1</u>	<u>1,462</u>	<u>1,462</u>
Totals	60	\$169,634	\$2,827

**Police
Distribution of Disability Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	9	\$17,939	\$1,993
45 – 49	11	25,429	2,312
50 – 54	12	35,741	2,978
55 – 59	8	21,521	2,690
60 – 64	9	22,610	2,512
65 – 69	4	10,534	2,634
70 – 74	2	4,555	2,278
75 – 79	3	8,245	2,748
80 +	<u>0</u>	<u>0</u>	<u>0</u>
Totals	58	\$146,574	\$2,527

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Retiree and Beneficiary Distributions

**Fire
Distribution of Beneficiaries**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	1	\$2,198	\$2,198
45 – 49	0	0	0
50 – 54	1	1,449	1,449
55 – 59	4	9,499	2,375
60 – 64	3	5,012	1,671
65 – 69	6	11,375	1,896
70 – 74	7	14,500	2,071
75 – 79	9	17,237	1,915
80 +	<u>18</u>	<u>26,386</u>	<u>1,466</u>
Totals	49	\$87,656	\$1,789

**Police
Distribution of Beneficiaries**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	1	\$2,110	\$2,110
45 – 49	2	3,327	1,664
50 – 54	0	0	0
55 – 59	3	8,079	2,693
60 – 64	5	9,035	1,807
65 – 69	4	7,785	1,946
70 – 74	8	13,115	1,639
75 – 79	5	9,043	1,809
80 +	<u>7</u>	<u>12,232</u>	<u>1,747</u>
Totals	35	\$64,726	\$1,849

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Distribution of Active Police Participants by Age and by Years of Service
(as of June 30, 2010)

YEARS OF CREDITED SERVICE												
Attained Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	Total	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
Under 25	0	0	0	0	0	0	0	0	0	0	0	
25 to 29	0	2	8	0	0	0	0	0	0	0	10	
30 to 34	0	0	43	8	0	0	0	0	0	0	51	
35 to 39	0	0	19	40	15	0	0	0	0	0	74	
40 to 44	0	0	8	16	21	1	0	0	0	0	46	
45 to 49	0	0	4	3	15	20	1	0	0	0	43	
50 to 54	0	0	1	0	5	4	0	0	0	0	10	
55 to 59	0	0	0	0	1	3	0	0	0	0	4	
60 to 64	0	0	0	0	0	0	0	0	0	0	0	
65 to 69	0	0	0	0	0	0	0	0	0	0	0	
70 and up	0	0	0	0	0	0	0	0	0	0	0	
Total	0	2	83	67	57	28	1	0	0	0	238	

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Distribution of Active Fire Participants by Age and by Years of Service
(as of June 30, 2010)

YEARS OF CREDITED SERVICE												
Attained Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	Total	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
Under 25	0	0	0	0	0	0	0	0	0	0	0	
25 to 29	0	1	8	0	0	0	0	0	0	0	9	
30 to 34	0	0	13	3	0	0	0	0	0	0	16	
35 to 39	0	0	13	25	3	0	0	0	0	0	41	
40 to 44	0	1	13	23	10	2	0	0	0	0	49	
45 to 49	0	0	1	11	16	8	0	0	0	0	36	
50 to 54	0	0	0	2	9	3	0	0	0	0	14	
55 to 59	0	0	0	1	2	0	0	0	0	0	3	
60 to 64	0	0	0	0	0	0	0	0	0	0	0	
65 to 69	0	0	0	0	0	0	0	0	0	0	0	
70 and up	0	0	0	0	0	0	0	0	0	0	0	
Total	0	2	48	65	40	13	0	0	0	0	168	

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2010 Actuarial Valuation

Summary of Changes in Participant Data

	<u>Active Participants</u>	<u>Retired Participants</u>	<u>Terminated Vested Participants</u>	<u>Total</u>
Count as of July 1, 2009	481	477	9	967
New Entrants	14	0	0	14
Age and Service Retirements	(9)	10	(1)	0
Duty Disability Retirements	0	0	0	0
Non-Duty Disability Retirements	0	0	0	0
Duty Related Deaths	0	0	0	0
Non-Duty Related Deaths	0	0	0	0
Vested Terminations - Received Refund	(5)	0	0	(5)
Vested Terminations - No Refund	(1)	0	1	0
Nonvested Terminations - Received Refund	(1)	0	0	(1)
Nonvested Terminations - No Refund	(1)	0	0	(1)
Tier 2 Members Transferred to LAGERS	(72)	0	0	(72)
Deceased with Beneficiary	0	(6)	0	(6)
New Beneficiaries	0	6	0	6
Deceased without Beneficiary	0	(2)	0	(2)
Received Refund	0	0	(1)	(1)
Data Corrections	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Changes	<u>(75)</u>	<u>8</u>	<u>(1)</u>	<u>(68)</u>
Count as of June 30, 2010	<u>406</u>	<u>485</u>	<u>8</u>	<u>899</u>

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